4. [10 points] Let $h(x)$ be a twice differentiable function defined for all real numbers x. (So h is differentiable and its derivative h' is also differentiable.)
Some values of $h'(x)$, the derivative of h are given in the table below.

x	-8	-6	-4	-2	0	2	4	6	8
$h'(x)$	3	7	0	-3	-5	-4	0	-2	6

For each of the following, circle all the correct answers.
Circle "NONE OF THESE" if none of the provided choices are correct.

a. [2 points] Circle all the intervals below in which $h(x)$ must have a critical point.

$-8 < x < -6$ $\quad$ $\boxed{-6 < x < -2}$ $\quad$ $-2 < x < 2$ $\quad$ $\boxed{2 < x < 6}$ $\quad$ $\boxed{6 < x < 8}$

NONE OF THESE

b. [2 points] Circle all the intervals below in which $h(x)$ must have a local extremum (i.e. a local maximum or a local minimum).

$-8 < x < -6$ $\quad$ $\boxed{-6 < x < -2}$ $\quad$ $-2 < x < 2$ $\quad$ $2 < x < 6$ $\quad$ $\boxed{6 < x < 8}$

NONE OF THESE

c. [2 points] Circle all the intervals below in which $h(x)$ must have an inflection point.

$\boxed{-8 < x < -4}$ $\quad$ $-4 < x < 0$ $\quad$ $0 < x < 4$ $\quad$ $\boxed{2 < x < 6}$ $\quad$ $\boxed{4 < x < 8}$

NONE OF THESE

d. [2 points] Circle all the intervals below which must contain a number c such that $h''(c) = 2$.

$\boxed{-8 < x < -6}$ $\quad$ $-4 < x < -2$ $\quad$ $-2 < x < 0$ $\quad$ $\boxed{2 < x < 4}$ $\quad$ $6 < x < 8$

NONE OF THESE

e. [2 points] Suppose that $h''(x) < 0$ for $x < -8$, and $h(-8) = 7$. Circle all the numbers below which could equal the value of $h(-10)$.

$\boxed{-2}$ $\quad$ $\boxed{-1}$ $\quad$ $\boxed{0}$ $\quad$ 1 $\quad$ 2

NONE OF THESE